

>gi|20544143|ref|NM_001893.3| Homo sapiens casein kinase 1, delta
(CSNK1D), transcript variant 1, mRNA
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GGAGCCGGAGCGGACCCGCAGTAGCGGCAGCAGCGCGCCCTCCAGAGTTAGACCCAGGAAGCG
GCCGGGAGGGCAGGAGCGAATCGGGCCGCCATGGAGCTGAGAGTCGGGAACAGGTACCGGCTGG
GCCGGAAGATCGGCAGCGCTCTCGGAGACATCTATCTGGTACGGACATTGCTGCAGGAGAAGAGGT
TGCCATCAAGCTTGAATGTGTCAAAACCAACACCCTCAGCTCCACATTGAGAGCAAATCTACAAGATG
ATGCAGGGAGGAGTGGCATCCCCACCATCAGATGGTGCAGGGCAGAGGGGACTACAACGTATGGTGA
TGGAGCTGCTGGGGCAAGCCTGGAGGACCTTCAACTTCTGCTCCAGGAATTCAAGCCTAAAACCGT
CCTGCTGTTGCTGACCAAATGATCAGTCGCATCGAATACATTCAAAAGAACCTCATCCACCGGGAT
GTGAAGCAGACAACTCCTCATGGGCTGGGAAGAAGGGCACCTGGTGTACATCATGACTTCGGGC
TGGCCAAGAAGTACGGGATGCACGCACCCACCAGCACATCCCCTATCGTAGAACAAAGAACCTCACGG
GACGGCGCGGTACGCCATCAACACGCACCTTGAATTGAAACAATCCGAAGAGATGACTGGAGTCT
CTGGGCTACGTGTAATGTAATTCAACCTGGGCTCTCTCCCTGGCAGGGCTGAAGGCTGCACCAAGA
GACAGAAATACGAAAGGATTAGCGAGAAGAAAATGCCACCCCCATCGAAGTGTGTAAAGGCTACCC
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GAGACACTCGCGAACCGGCTACCCGCCCTCCACAGCCTCCGGCCCTGCCGGGACGCAG
GAAGTGGCTCCCCCACACCCCTACCTCACACACGGCTAACACCTCCCCCGGCCGTCTCCG
GCATGGAGAGAGAGGGAAAGTGAGTATGCGGCTGCACGCCGGGCCCCGTCAACATCTCCTCGTCCGA
CTTCACAGGCCAGAACAGATACTCTCGCATGTCCACCTCACAGATTCTGGTGGCTCCAGTGGT
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CTCCAGGCCACTACCCAGCGACGCTCGTGGGGAAACATAACTAAACGGACAGACTCCAAGAGCTGCCAC
CGCTGGGCTGCACGCGGCCCCCACGTGAACTCGGTTGTAACGGGGCTGGGAAGAAAAGCAGAGAGAG
AATTGCAGAGAACAGACTCTTTCCAGGGCTCAGCTCCCTCAGTGGTGGCCCTGTACTCCCTG
ACGATTCCACTGTAACTACCAATCTCTACTGGTTAACAGACTTTGTATCATTGCTAAAAATTATT
GGCTTAAATCTGTGAAAGAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

Figure 1

10/536735

PCT/US2003/037992

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Homo sapiens casein kinase 1, delta (CSNK1D), transcript variant 2,
mRNA Wild type
GCGCGATGGCGCGCTCCTTAGGCAGCTGAAAGGGATTAGGCCGGAAGATCCGAGTCCATCCGCG
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CCCGTATTGAGGCCTGGAGCGCGGGCGACAGGAAGCGATGGTAAAGCGGGCGTGAGGGGGC
GGAGCGGGAGCGGACCCGCACTAGCAGCAGCGCGCCCTCCAGAGTTCAAGACCCAGGAAGCG
GCCGGGAGGGCAGGAGCAATCGGGCCGCCGCATGGAGCTGAGAGTCGGAACAGGTACCGGCTGG
GCCGGAAGATCGGCAGCGCTCTCGGAGACATCTATCTGGTACGGACATTGCTGCAGGAGAAGAGGT
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ATGCAGGGAGGAGTGGCATCCCCACCATCAGATGGTGCAGGGGAGAGGGGACTACAACGTATGGTGA
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CCTGCTGCTGCTGACCAAATGATCAGTCGCATCGAATAACATTCAAAAGAACATTCAACCCACGGGAT
GTGAAGCCAGACAACCTCCTCATGGGCTGGGAAGAAGGGCAACCTGGTGTACATCATCGACTTCGGC
TGGCCAAGAAGTACCGGATGCACGCACCCACCAGCACATCCCTATCGTGAAGAACAAAGAACCTCACGG
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TTACCAATGGCTTACTAGTGACACGTCCCCGGTCTAGGATGAAATGTTAACACCGGGAGCTCTCCAG
GCCACTCACCCAGCGACGCTCGTGGGAAACATACTAAACGGACAGACTCCAAGAGCTGCCACCGCTGG
GGCTGCAGTGCAGGGCCCCACGTGAACCTGGTTGTAACGGGCTGGGAAGAAAAGCAGAGAGAGAAATTGC
AGAGAACATGAGACTCCTTCCAGGGCCTCAGCTCCCTCCAGTGGTGGCCCTGTACTCCCTGACGATT
CCACTGTAACTACCAATCTTCACTTGGTTAAGACAGTTTGATCATTTGCTAAAAATTATTGGCTTA
AAATCTGTGTAAGAA
AAAAAA

Figure 2

10/536735

PCT/US2003/037992

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A.

```
>gi|20149530|ref|NP_001884.2| casein kinase 1, delta, isoform 1 [Homo sapiens] Wild Type
MELRVGNRYRLGRKIGSGSFGDIYLGTDIAAGEEVAIKLECVTKHPQLHIESKIYKMMQGGVGIPТИR
CGAEGDYNVMVMEILGPSLEDLFNFCSRKFSLKTVLLADQMISRIEYIHSKNFIHRDVKPDNFLMGLGK
KGNLVYIIDFGLAKKYRDARTHQHIPYRENKNLTGTARYASINTHLGIEQSRRDDLES LGYVLMYFNLS
LPWQGLKAATKRQKYERISEKKMSTPIEVLCKGYPSEFATYLNFCRSLRFPDDKPDYSYLRLFRNLFH
GFSYDYVFDWNMLKFGASRAADDAERERRDREERLHSRNPATRGLPSTASGRLRGTOEVAPPTPLPTS
HTANTSPPVSGMERERKVSMLHRGAPVNISSSDLTGRQDTSRMSTSQIPGRVASSGLQSVVHR
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B.

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>gi|20544145|ref|NP_620693.1| casein kinase 1, delta, isoform 2 [Homo sapiens] Wild Type
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CGAEGDYNVMVMEILGPSLEDLFNFCSRKFSLKTVLLADQMISRIEYIHSKNFIHRDVKPDNFLMGLGK
KGNLVYIIDFGLAKKYRDARTHQHIPYRENKNLTGTARYASINTHLGIEQSRRDDLES LGYVLMYFNLS
LPWQGLKAATKRQKYERISEKKMSTPIEVLCKGYPSEFATYLNFCRSLRFPDDKPDYSYLRLFRNLFH
GFSYDYVFDWNMLKFGASRAADDAERERRDREERLHSRNPATRGLPSTASGRLRGTOEVAPPTPLPTS
HTANTSPPVSGMERERKVSMLHRGAPVNISSSDLTGRQDTSRMSTSQNSIPFEHHGK
```

Figure 3

Homo sapiens mutant casein kinase 1, delta (CSNK1D)

GCGCGATGGCGGCGGCTCCTTACGGCAGCTGAAGGGGATTAGGCCCGAAGATCCGAGTCCATCCGC
GCGGGGAGAGGGCAAGCGGGACCGTAGGGGCCGGAGCAGGGCGGCCCTCGGACTGTCCCATCCGC
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GCCGGAAAGATCGGAGCGCTCCTCGGAGACATCTATCTGGTACGGACATTGCTGCAGGAGAACAGGT
TGCCATCAAGCTTGAATGTGCAAAGCCAAACACCCCTCAGCTCCACATTGAGAGCAAATCTACAAGATG
ATGCAGGGAGGAGTGGCATCCCCACCATCAGATGGTGCGGGGAGAGGGGACTACAACGTATGGTGA
TGGAGCTGCTGGGCCAAGCCTGGAGGACCTCTCAACTTCTGCTCCAGGAATTAGCCTCAAAACCGT
CTGCTGCTGCTGACCAAATGATCAGTCGATCGAATACATTCAAAAGAACCTCATCCACCGGAT
GTGAAGCCAGACAACCTCCTATGGGCTGGGAAGAAGGGCACCTGGTGTACATCATCGACTTCGGGC
TGGCCAAGAAGTACCGGGATGCACGCAACCACAGCACATCCCCATCTGTGAGAACAGAACCTCACGGG
GACGGCGCGGTACGCCTCCATCAACACGCACCTTGAATTGAAACAATCCCAGAGAGATGACTTGGAGTCT
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GACAGAAATACGAAAGGATTAGCGAGAAGAAAATGTCCACCCCCATCGAAGTGTGTAAAGGCTACCC
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TGCTCAAATTGGTGCCAGCCGGCCCGATGACGCCAGCGAGCGCAGGGACCGAGAGGAGCGGCT
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CCTCACAGGCCACAAGATAACCTCTCCGATGTCACCTCACAGATTCTGGTGGCTCCAGTGGT
CTTCAGTCTGTCGTGACCGATGAGAACTCTCCTATTGCTGTGAAGGGCAGACAATGCATGGCTGATCT
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CTCCAGGCCACTACCCAGCGACGCTCGTGGGGAAACATACTAAACGGACAGACTCCAAGAGCTGCCAC
CGCTGGGCTGCACTGCCACCGTGAACCGGTTGTAACGGGGCTGGAAAGAAAAGCAGAGAGAG
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ACGATTCCACTGTAACCTACCAATCTTCACTTGTTAAGACAGTTTGTATCATTGCTAAAAATTATT
GGCTTAAATCTGTTAAAGAA

Figure 4

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PCT/US2003/037992

Homo sapiens casein kinase 1, delta (CSNK1D), transcript variant 2,
mRNA Mutant

GCGCGATGGCGGGCTCTTAGGCACCTGAAAGGGATTAGGCCCGAAGATCCGAGTCATCCGG
GCGGGGAGAGGGCAAGCGGGACCGGTAGGGCCGGAGCAGCGCGCGCTCGACTGTCCATCCGC
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GGAGCGGGAGCGGACCCGCACTAGCGCAGCAGCGCGCCCTCCAGAGTTACGACACCAGGAAGCG
GCCGGGAGGGCAGGAGCGAACGGCCCGCCGCGCATGGAGCTGAGACTCGGAACAGGTACCGGCTGG
GCCGGAAGATCGGCAGCGCTCCCTCGGAGACATCTATCTGGTACGGACATTGCTGCAGGAGAAGAGGT
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GGCTGCACTGCCGG
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CCACTGTAACTACCAATCTTCACTTGTTAAGACAGTTGTATCATTTGCTAAAAATTATTGGCTTA
AATCTGTGTAAAGAA
AAAAAA

Figure 5

10/536735

PCT/US2003/037992

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A.

>gi|20149530|ref|NP_001884.2| casein kinase 1, delta, isoform 1 [Homo sapiens] Mutant
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CGAEGDYNVMVMELLGPSLEDLFNFCSRKFSLKTVLLADQMISRIEYIHSKNFIHRDVKPDNFLMGLGK
KGNLVYIIDFGLAKKYRDARTHQHIPYRENKNLTGTARYASINTHLGIEQSRRDDLES~~LG~~GYVLMYFNLGS
LPWQGLKAATKRQKYERISEKKMSTPIEVLC~~K~~GYPSEFATYLNFCRSLRFDDKPDYSYLQLFRNLFH~~R~~Q
GFSYDYVFDWNMLKFGASRAADDAERERRDREERLRHSRNPATRGLPSTASGRLRG~~T~~QEVA~~P~~PTPLTPTS
HTANTS~~PR~~PVSGMERERKVSMRLHRGAPVN~~I~~SSDLTGRQDTSRMSTSQIPGRVASSGLQSVVR

B.

>gi|20544145|ref|NP_620693.1| casein kinase 1, delta, isoform 2 [Homo sapiens] Mutant
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CGAEGDYNVMVMELLGPSLEDLFNFCSRKFSLKTVLLADQMISRIEYIHSKNFIHRDVKPDNFLMGLGK
KGNLVYIIDFGLAKKYRDARTHQHIPYRENKNLTGTARYASINTHLGIEQSRRDDLES~~LG~~GYVLMYFNLGS
LPWQGLKAATKRQKYERISEKKMSTPIEVLC~~K~~GYPSEFATYLNFCRSLRFDDKPDYSYLQLFRNLFH~~R~~Q
GFSYDYVFDWNMLKFGASRAADDAERERRDREERLRHSRNPATRGLPSTASGRLRG~~T~~QEVA~~P~~PTPLTPTS
HTANTS~~PR~~PVSGMERERKVSMRLHRGAPVN~~I~~SSDLTGRQDTSRMSTSQNSIPFEHHGK

Figure 6

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PCT/US2003/037992

WO 2004/050841

>gi|23199990|ref|NM_152221.1| Homo sapiens casein kinase 1, epsilon
(CSNK1E), transcript variant 1, mRNA
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CCGGCATCCGCCCGGGCGCCCCCGCCGCAGCCCCCGAGCAGTGGCCGGCATCGCGCCT
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TCTCGGGAAAGTGGAGAGGCCATTGGACCAGTGGCTTAGTGTCTCACTGTATTTCTTAAAA
AAAAAAAAAAAAAA

Figure 7

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PCT/US2003/037992

WO 2004/050841

>gi|4503093|ref|NP_001885.1| casein kinase 1 epsilon; CKI-epsilon;
casein kinase I epsilon [Homo sapiens] Wild Type
MELRVGNKYRLGRKIGSGSFGDIYLGANIASGEEVAIKLECVTKHPQLHIESKFYKMMQGGVGIPS IKW
CGAEGDYNVMVMELLGPSLEDLFNFCSRKFSLKTVLLADQMISRIEYIH SKNFIH RDVKPDNFLMGLGK
KGNLVYIIDFGLAKKYRDARTHQHIPYRENKNLTG TARYASINTHLGIEQSRRDDLES LGYVLMYFNLGS
LPWQGLKAATKRQKYERISEKKMSTPIEVLCKGYPSEFSTYLNFCRSLRFDDKPDYSYLRQLFRNL FHRQ
GFSYDYVFDWNMLKFGAARNPEDVDREREREERMGQLRG SATRALPPGPPTGATANRLRSAAEPVAS
TPASRIQPAGNTSPRAISRVD RERKVSMRLH RGAPANVSSDLTGRQEVS RIPASQTSVPFDHLGK

Figure 8

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Homo sapiens mutant casein kinase 1, epsilon (CSNK1E)

GGGAGGC GGCGGGCGGGCGGGCGGGCGGGCGAGAGGCCAGAGCCAGAGCCCAGGGCCGGGGCCAGCGGAG
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TCCCAGGGCAAGAGTGAGCCATGGAGCTACGTGGGAACAAGTACCGCCTGGACGGAAGATCGGG
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ATCTCGGGGTGACCGGGAGAGGAAGGTGAGTATGAGGCTGACAGGGGTGCGCCGCCAACGTCTCC
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AAAAAAAAAAAAAAA

Figure 9

```
>gi|4503093|ref|NP_001885.1| casein kinase 1 epsilon; CKI-epsilon;  
casein kinase I epsilon [Homo sapiens] Mutant  
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CGAEGDYN VMVMELLG PSL EDLFNFC SRKFS LKV LLA DQMIS RIEYIH SKNF IHR DVKP DNFL MGLK  
KG NLV YI IDF GLAK KYRD ART HQH I PYREN KNL TGTARY ASINT HLG IEQS RR DDLES LGY VL MYF NLGS  
LPW QGLKAATKRQKYER ISEK KMSTPIEV LCKGPSEF STYL NFCS RLRF DDKPDY SYLR QLFR NL FHRQ  
GFSY DYVFD WNLKFG AARNP EDV DRER ERE ER MGQL RGSA TRAL PPGP PTGAT ANRL RSAAE PVAS  
TPAS RIQPAGNTSPRAISRVDRER KVSM RLH RGAP ANVSSDLT GRQE VSRI PAS QT SVPF DHGK
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Figure 10